

WHAT IS CLAIMED IS:

1. A compression ratio control method adopted in an internal combustion engine comprising the step of:

providing a driving source that generates a rotational driving
5 force to vary a compression ratio, a transmission module that transmits the rotational driving force, and a compression ratio varying mechanism that receives the rotational driving force transmitted by said transmission module;

actuating said compression ratio varying mechanism to drive
10 at least one of a piston head and a crank casing against a combustion pressure, so as to change a positional relation between said piston head and said crank casing and vary a volume of a combustion chamber, in order to vary the compression ratio;

producing a pressing force, which is to be applied to said
15 piston head and said crank casing, according to the change of the positional relation between them, in the course of actuation of said compression ratio varying mechanism to vary the compression ratio;
and

applying the pressing force to said piston head and said crank
20 casing to reduce a transmission torque of the rotational driving force of said driving source by said transmission module, thereby assisting said compression ratio varying mechanism to vary the compression ratio.

2. An internal combustion engine that varies a compression

ratio, said internal combustion engine comprising:

a driving source that generates a rotational driving force to vary a compression ratio;

5 a transmission module that transmits the rotational driving force;

a compression ratio varying mechanism that receives the rotational driving force transmitted by said transmission module, drives at least one of a piston head and a crank casing with the received rotational driving force, so as to change a positional relation
10 between said piston head and said crank casing and vary a volume of a combustion chamber, thereby varying the compression ratio; and

a pressing module that produces a pressing force, which is to be applied to said piston head and said crank casing,

in the course of actuation of said compression ratio varying
15 mechanism to vary the compression ratio, said pressing module producing the pressing force according to the change of the positional relation between said piston head and said crank casing and applying the pressing force to said piston head and said crank casing to reduce a transmission torque of the rotational driving force of said driving
20 source by said transmission module, thereby assisting said compression ratio varying mechanism to vary the compression ratio.

3. An internal combustion engine in accordance with claim 2, wherein said pressing module applies the pressing force to the two mechanical members, such that the pressing force is combined with a
25 first force, which is produced by a combustion pressure to be involved

in the transmission of the rotational driving force to said compression ratio varying mechanism by said transmission module, and with a second force, which is produced by actuation of said compression ratio varying mechanism to be involved in the
5 transmission of the rotational driving force, to reduce the transmission torque.

4. An internal combustion engine in accordance with claim 3, wherein said pressing module comprises a spring mechanism that has a spring characteristic regulated to supplement the first force in
10 an actuation state of said compression ratio varying mechanism to decrease the compression ratio.

5. An internal combustion engine in accordance with claim 3, wherein said pressing module comprises a spring mechanism that has a spring characteristic regulated to relieve the first force in an
15 actuation state of said compression ratio varying mechanism to increase the compression ratio.